FIG. 1

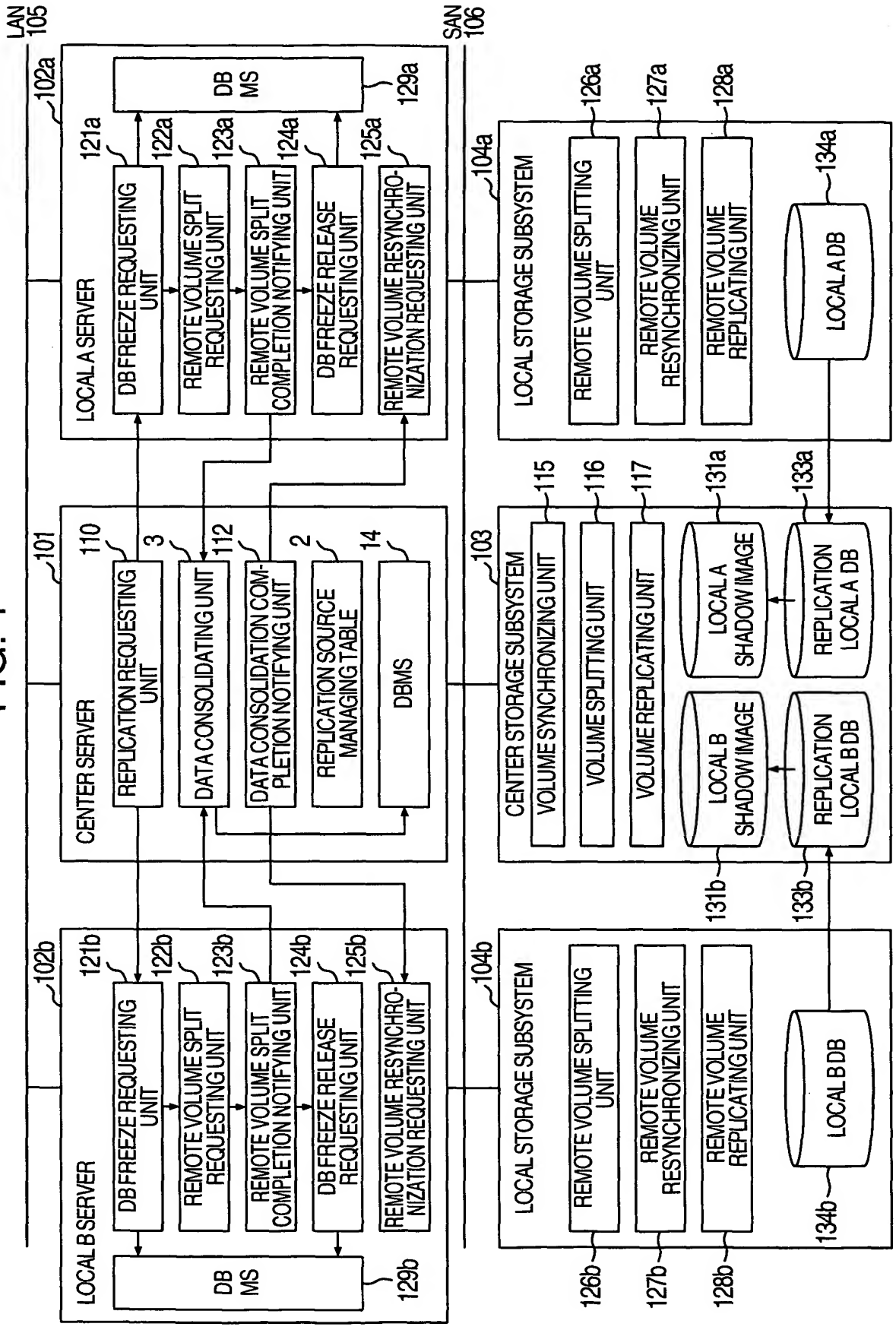

LAN
105
SAN
106
LOCAL A SERVER
102a
121a
DB FREEZE REQUESTING UNIT
122a
REMOTE VOLUME SPLIT REQUESTING UNIT
123a
REMOTE VOLUME SPLIT COMPLETION NOTIFYING UNIT
124a
DB FREEZE RELEASE REQUESTING UNIT
125a
REMOTE VOLUME RESYNCHRONIZATION REQUESTING UNIT
DB MS
129a
CENTER SERVER
101
110
REPLICATION REQUESTING UNIT
3
DATA CONSOLIDATING UNIT
112
DATA CONSOLIDATION COMPLETION NOTIFYING UNIT
2
REPLICATION SOURCE MANAGING TABLE
14
DBMS
LOCAL B SERVER
102b
121b
DB FREEZE REQUESTING UNIT
122b
REMOTE VOLUME SPLIT REQUESTING UNIT
123b
REMOTE VOLUME SPLIT COMPLETION NOTIFYING UNIT
124b
DB FREEZE RELEASE REQUESTING UNIT
125b
REMOTE VOLUME RESYNCHRONIZATION REQUESTING UNIT
DB MS
129b
LOCAL STORAGE SUBSYSTEM
104a
REMOTE VOLUME SPLITTING UNIT
126a
REMOTE VOLUME RESYNCHRONIZING UNIT
127a
REMOTE VOLUME REPLICATING UNIT
128a
LOCAL A DB
134a
CENTER STORAGE SUBSYSTEM
103
VOLUME SYNCHRONIZING UNIT
115
VOLUME SPLITTING UNIT
116
VOLUME REPLICATING UNIT
117
LOCAL A SHADOW IMAGE
131a
REPLICATION LOCAL A DB
133a
LOCAL B SHADOW IMAGE
131b
REPLICATION LOCAL B DB
133b
LOCAL STORAGE SUBSYSTEM
104b
REMOTE VOLUME SPLITTING UNIT
126b
REMOTE VOLUME RESYNCHRONIZING UNIT
127b
REMOTE VOLUME REPLICATING UNIT
128b
LOCAL B DB
134b

FIG. 2

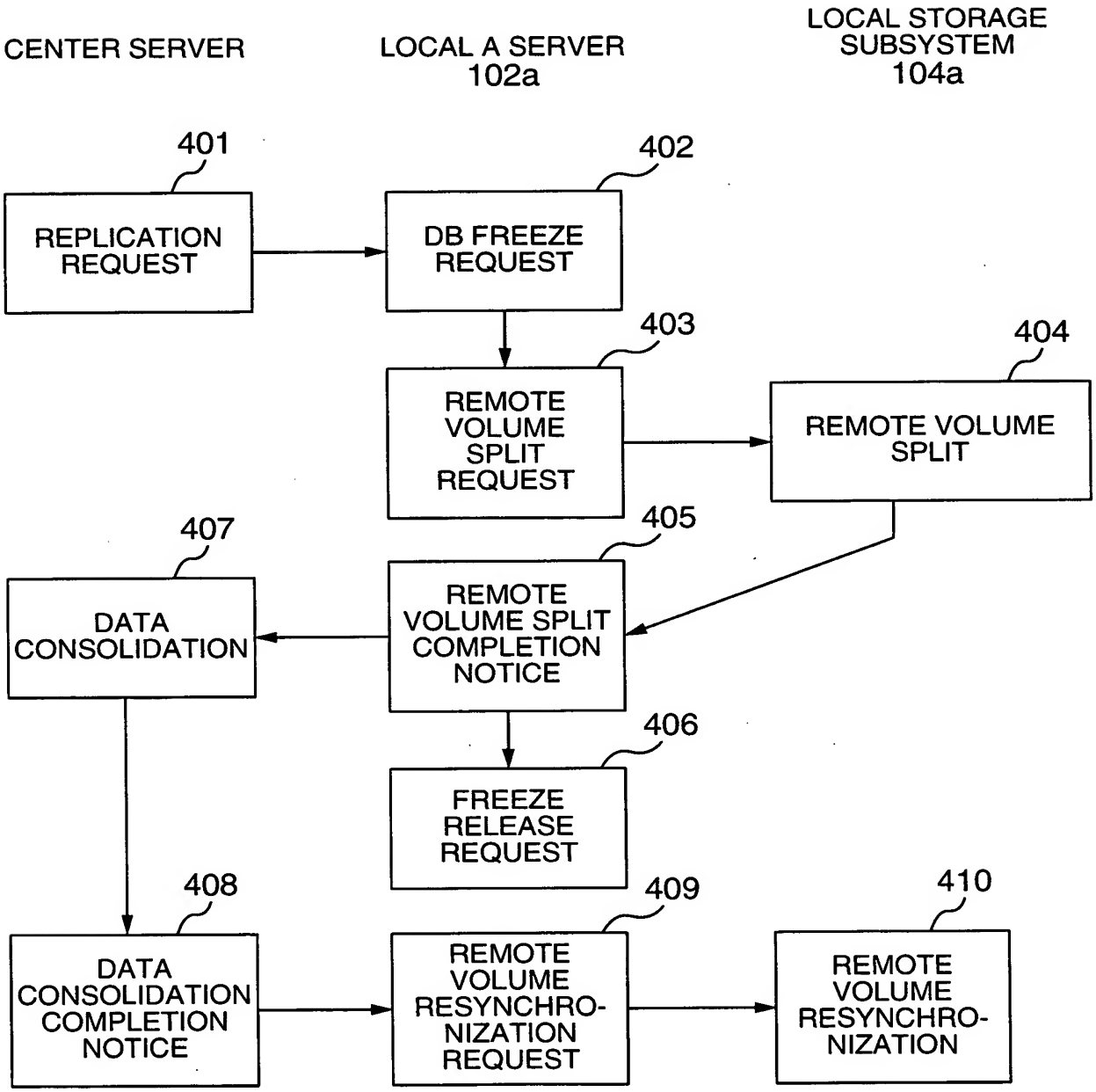

CENTER SERVER
LOCAL A SERVER
102a
LOCAL STORAGE
SUBSYSTEM
104a
401
REPLICATION REQUEST
402
DB FREEZE REQUEST
403
REMOTE VOLUME SPLIT REQUEST
404
REMOTE VOLUME SPLIT
405
REMOTE VOLUME SPLIT COMPLETION NOTICE
406
FREEZE RELEASE REQUEST
407
DATA CONSOLIDATION
408
DATA CONSOLIDATION COMPLETION NOTICE
409
REMOTE VOLUME RESYNCHRO-NIZATION REQUEST
410
REMOTE VOLUME RESYNCHRO-NIZATION

FIG. 3

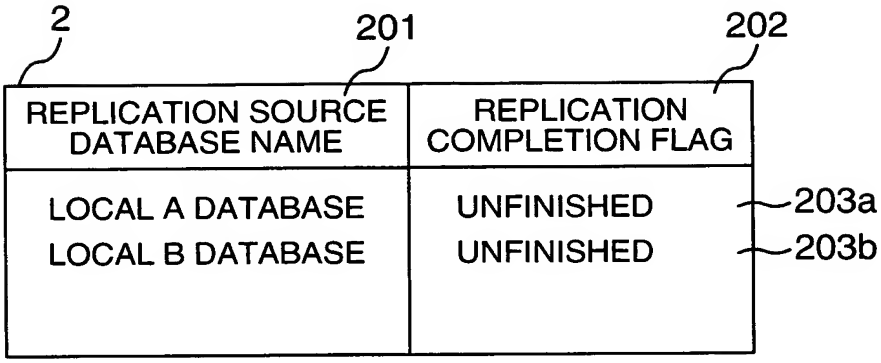

2
201
202
REPLICATION SOURCE DATABASE NAME
REPLICATION COMPLETION FLAG
LOCAL A DATABASE
UNFINISHED
203a
LOCAL B DATABASE
UNFINISHED
203b

FIG. 4

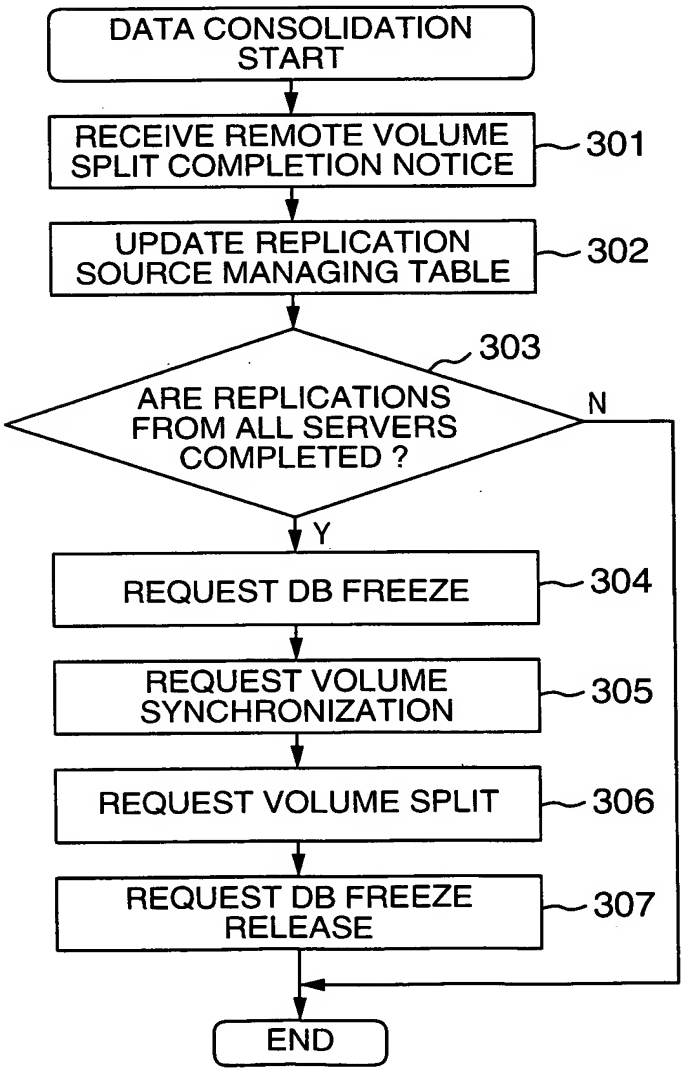

DATA CONSOLIDATION START
RECEIVE REMOTE VOLUME SPLIT COMPLETION NOTICE
301
UPDATE REPLICATION SOURCE MANAGING TABLE
302
303
ARE REPLICATIONS FROM ALL SERVERS COMPLETED ?
N
Y
REQUEST DB FREEZE
304
REQUEST VOLUME SYNCHRONIZATION
305
REQUEST VOLUME SPLIT
306
REQUEST DB FREEZE RELEASE
307
END

FIG. 5

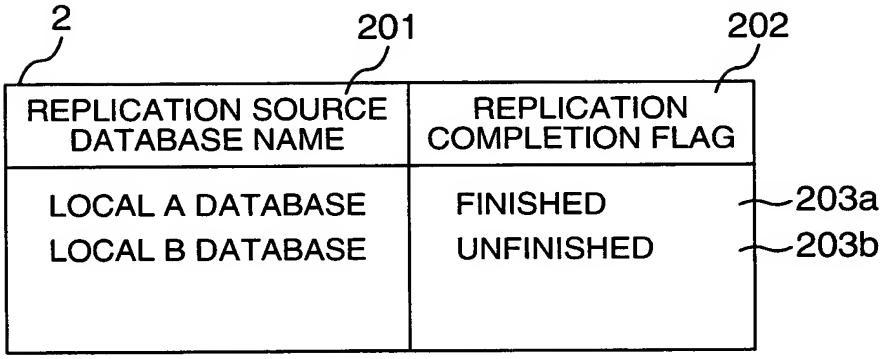
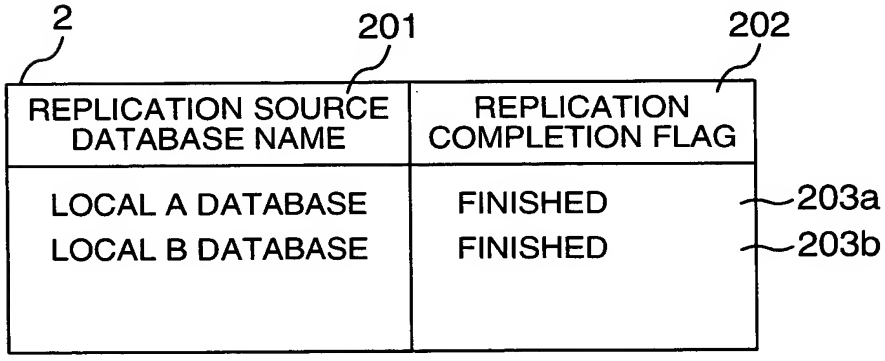

2
201
202
REPLICATION SOURCE DATABASE NAME
REPLICATION COMPLETION FLAG
LOCAL A DATABASE
FINISHED
203a
LOCAL B DATABASE
UNFINISHED
203b

FIG. 6


2
201
202
REPLICATION SOURCE DATABASE NAME
REPLICATION COMPLETION FLAG
LOCAL A DATABASE
FINISHED
203a
LOCAL B DATABASE
FINISHED
203b